








First record of Fulvous Whistling-duck, *Dendrocygna bicolor* (Vieillot, 1816) (Anseriformes, Anatidae), in the Rondônia state, Brazil


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Abstract

Based on field surveys, we report new distribution data of Fulvous Whistling-duck, *Dendrocygna bicolor* (Vieillot, 1816), from the state of Rondônia, southwestern Amazon, Brazil. This is the first record of *D. bicolor* from Rondônia and extend the geographic distribution of this species by 946 km from São Fabiano, Mato Grosso state, Brazil, and 688 km from Trinidad, Bolivia.

Keywords

Migration, ornithology, range extension, tropical rainforest

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Introduction

Fulvous Whistling-duck, *Dendrocygna bicolor* (Vieillot, 1816), is a widely distributed species in tropical, sub-tropical, and temperate regions in the world (Hohman and Lee 2020). It is both a migratory or resident species throughout the year, depending on the region (Hohman

and Lee 2020). It can live in colonies of 50–500 individuals (Jyotismita et al. 2011). The species inhabits swamps and open and flooded habitats, avoiding dense forests (Santiago 2006) and builds nests in palustrine vegetation or in hollows in trees (Santiago 2006). It feeds on grasses

along the banks of lakes, as well as on aquatic plants, small fish, and even tadpoles (Jyotismita et al. 2011).

Dendrocygna bicolor reproduces the rainy season when water levels are higher (Jyotismita et al. 2011). Females lay 8–14 eggs (Santiago 2006), and parental care is taken in turn by males and females (Jyotismita et al. 2011). Nestlings begin to practice flight at approximately 55 days of age (Santiago 2006). Females prefer males that are more ornate (Andersson 1994) and with fully developed plumage (Klint 1980; Weidmann 1990; Omland 1996). During breeding, birds are most aggressive, likely related to the courtship of females (Jyotismita et al. 2011). In dry periods, *D. bicolor* shows a high level of awareness, due to lower water levels, which increases the risk of being predated (Jyotismita et al. 2011).

Dendrocygna bicolor can be found in the American, African, Asian, and southern European continents, as well as in Oceania (Santiago 2006; Jyotismita et al. 2011; Clements et al. 2017; BirdLife International 2021). Its conservation status is Least Concern (Jyotismita et al. 2011; BirdLife International 2021). In Brazil, the species is spread throughout the South, Southeast and Northeast regions, but it is in the South region where concentrations in higher numbers occur (Antas 1994). Here, we report the first record of *D. bicolor* from Rondônia, in southwestern Amazon, Brazil.

Methods

Our observation of *Dendrocygna bicolor* was made during an ornithological survey in the municipality of Candeias do Jamari, Rondônia, Brazil. Candeias do Jamari is in the middle of the Amazon rainforest and is where the Samuel Hydroelectric Plant was built with a 45 km long dike, creating a flooded area on the Jamari River. During the dry season, shallow lakes with aquatic vegetation are formed. Birds use the area to feed and breed. We used a Nikon P900 camera to photograph and record observations. Photographs (WA4103909 and WA4103924) and audio of the vocalization (WA4110650) were deposited in the Wikiaves database (Barbosa 2020a, 2020b, 2020c). The Merlin Bird ID app from Cornell University (<https://merlin.allaboutbirds.org/>) was used to assist in identification. We produced the map (Fig. 3) in QGIS v. 3.18.1-Zürich (QGIS Development Team 2021), and we used the distributional map by BirdLife International (2021) as a basis for the previously known distribution of *D. bicolor*.

Results

Dendrocygna bicolor (Vieillot, 1816)

Figures 1–3

New records. BRAZIL – **Rondônia** • Candeias do Jamari; –08.8017, –063.4641; 86 m elev.; 3.XII.2020; Raul Afonso Pommer Barbosa obs.; WA4103909, WA4103924, WA4110650.

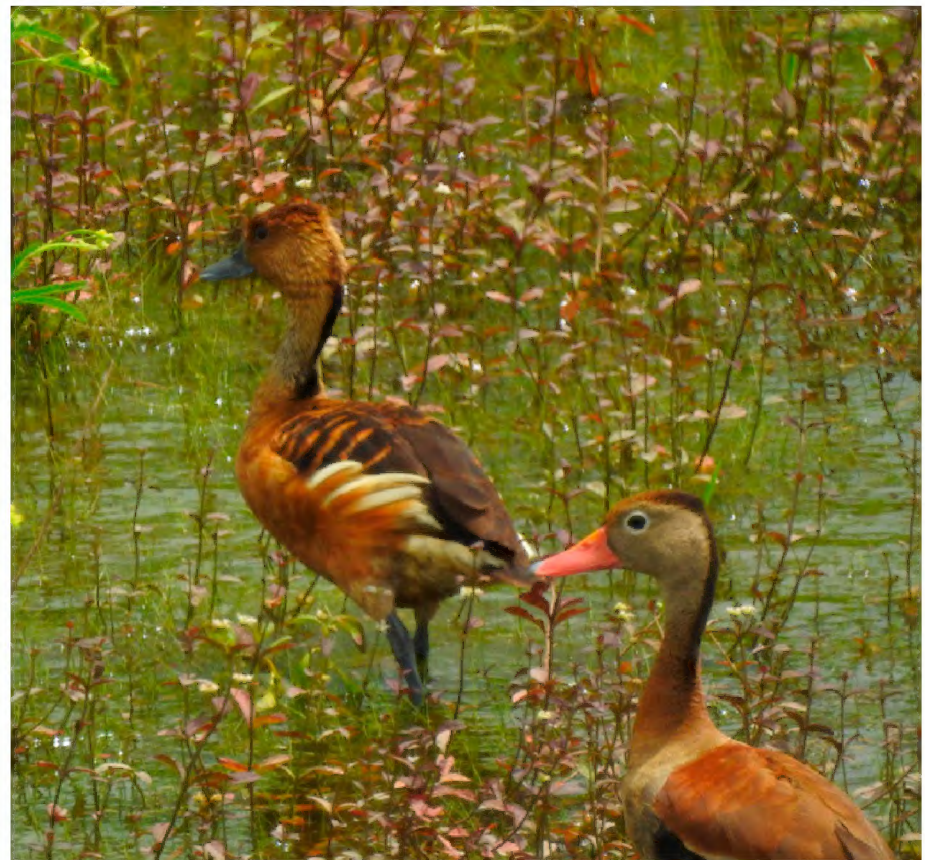


Figure 1. *Dendrocygna bicolor* (center) near an individual of *Dendrocygna autumnalis* (lower right), municipality of Candeias do Jamari, Rondônia, Brazil.



Figure 2. *Dendrocygna bicolor*, municipality of Candeias do Jamari, Rondônia, Brazil.

A single adult individual of this species was observed vocalizing and feeding near a rural road, among a flock of five individuals of *Dendrocygna autumnalis* (Linnaeus, 1758).

Identification. We identified the *D. bicolor* by a set of diagnostic features. As the name implies, the main color is caramel-brown. The wings have dark streaks, and the beak and legs are bluish-gray. Cornell University's Merlin Bird ID app also was used to identify the bird by artificial intelligence. Using a vocalization spectrogram generated by the Wikiaves platform, we compared the acoustic traits of our audio with those of other species of whistling ducks that inhabit the region, such as *Dendrocygna autumnalis* (Linnaeus, 1758), which has a four to five syllable whistle.

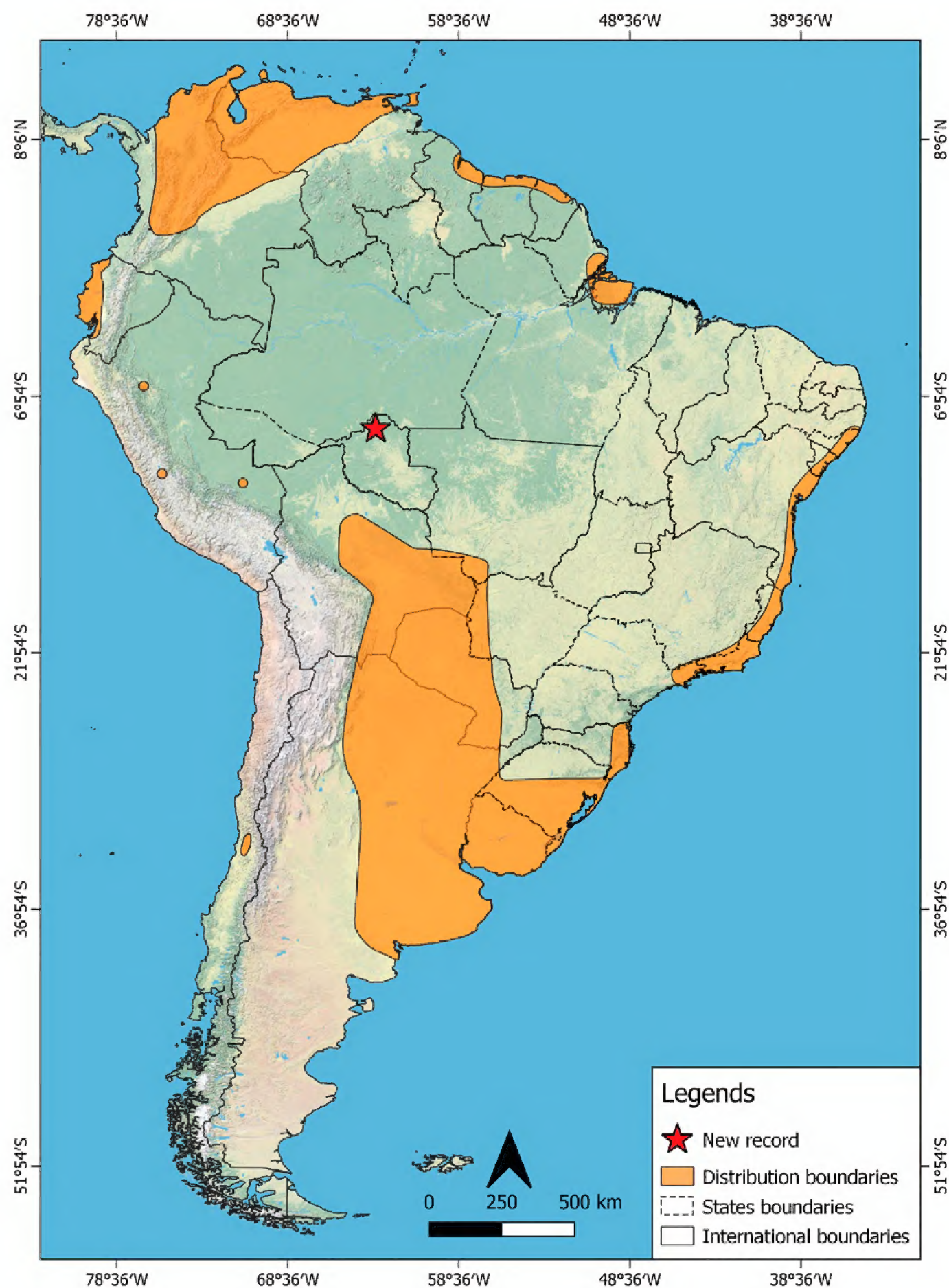


Figure 3. Map showing the distribution of *Dendrocygna bicolor*; the star shows the new record.

Discussion

This is the first record of *Dendrocygna bicolor* from Rondônia, Brazil, extending the geographic distribution of this species by 946 km from São Fabiano, Mato Grosso, Brazil, and 688 km from Trinidad, Bolivia (Fig. 3). This finding suggests that the geographic expansion of the range of *D. bicolor* may have been influenced by the new ecosystems created by the large hydroelectric reservoirs built in Rondônia, which provide favorable habitat for aquatic species. Antas (1994) and Antas et al. (2016) proposed that *D. bicolor* migrates between southern Brazil and the wetlands of the lower Paraná river basin. About 86 species of waterbirds, including migrants from the Arctic, northern South America, or Patagonia, use and depend on the Paraguay–Paraná River corridor wetlands (Antas 2004). This same connection route between the coast of Rio Grande do Sul and the middle Paraná

River is used by waterbirds such as Rosy-billed Pochard, *Netta peposaca* (Vieillot, 1816) and *D. bicolor* (Antas 1994; Nascimento et al. 2000; Antas et al. 2016).

According to Blanco et al. (2020), for some species, the strong seasonality of water levels in the Pantanal, the basin of the lower Paraná River, and southern Brazil is the limiting factor that forces their migration to areas for better feeding and survival. The expansion of the geographic distribution of *D. bicolor* to a wetland in Rondônia, north of the Pantanal, may indicate a migration site that provides better feeding conditions. Our new record also suggests the need for additional study of migratory bird patterns in Rondônia.

Finally, Sinkoc et al. (2016) described the parasitism of *D. bicolor* by *Rhinonyssus rhinolethrum* (Trouessart, 1895) (Acarina, Rhinonyssidae) in southern Rio Grande do Sul, Brazil. As *D. bicolor* is a well-known migratory bird in several regions of the world, there is a need to

evaluate the possibility of the dissemination of bird parasites, such as *R. rhinolethrum*, to the Amazon region.

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Authors' Contributions

Conceptualization: RAPB, WSPN. Data curation: RAPB, AMA. Investigation: RAPB, ALCP. Resources: RAPB. Supervision: RAPB. Visualization: AMA, WSPN. Writing – original draft: RAPB, DCT, MAO. Writing – review and editing: RSSD, AAS.

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